

ABSTRACT

A method of and kits for constructing and/or labeling polynucleotides is described, involving ligation of two or more oligonucleotides in the presence of a scaffold oligonucleotide complementary or partly complementary to the oligonucleotides to be ligated. No full-length polynucleotide template is required. Ligation may be performed under conditions that do not allow stable duplexes to form between the scaffold oligonucleotide and at least one of the oligonucleotides to be ligated. Under these unstable ligation conditions truncated or otherwise nonligatable contaminants in the preparations of these two oligonucleotides do not appreciably inhibit the formation of the desired polynucleotide product. The method of the invention enables use of oligonucleotides in ligation reactions without purification. The method of the invention also enables end-specific attachment of oligonucleotides to one or both termini of a target polynucleotide.